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## **The Double Meaning of a Single Act: Influences of the Perceiver and the Perceived on Cooperative Behaviour**

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### *Abstract*

*The present research examines how a single behaviour that is informative of both the morality and intelligence of a person influences impressions, degree of cooperative behaviour expected from that person, and degree of cooperative behaviour displayed toward that person in a mixed-motive interdependence situation (i.e., a social dilemma). Furthermore, it is investigated how individual differences in social value orientation influence these processes. Participants were provided with behavioural information that could be construed in terms of both morality (high/low) and intelligence (high/low). Consistent with the morality-importance hypothesis, participants assigned greater weight to morality than to intelligence aspects of the information. Congruent with the social value orientation hypothesis (i) only proselves and not prosocials expected more cooperation from unintelligent than from intelligent others, and (ii) prosocials attended more strongly to morality aspects than proselves in deciding on own cooperation. Finally, consistent with the relative benefit hypothesis, people overall expected more cooperation than they were willing to display, and this tendency was especially pronounced with others described by moral/unintelligent behaviour, and for people with a prosel self value orientation. The authors discuss a model describing influences of the perceiver and the perceived on cooperative behaviour. Copyright © 1999 John Wiley & Sons, Ltd.*

### **INTRODUCTION**

A person's behaviour is often informative of more than one aspect of his or her personality. Therefore, different perceivers may construe the same behaviour of a person in very different ways. Consider, for instance, somebody who is willing to do tedious overtime work again and again for a boss who does not reward this behaviour in terms of additional payments or enhanced career prospects. Some people may regard this person as very noble, being intrinsically concerned with the well-being of her co-workers or the organization as a whole. Others, however, may consider her

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quite stupid for investing in a situation without perspectives. In everyday life, we typically encounter situations in which the information we receive about other people is multi-interpretable. The way in which behavioural information is interpreted will then depend on both the behaviour of the perceived and the personality of the perceiver. The present research focuses on the way in which these two factors influence the interpretation of behavioural information, as well as the way in which the resulting impression guides the perceiver's expectations regarding future behaviour of the perceived, and the perceiver's behaviour toward the perceived.

Three assumptions underlie this research. The *first* is that, in everyday life, people generally form impressions of each other based on observed behaviour, and that this type of information about a person is often multi-interpretable. Our current focus in this respect is on the well-known dimensions of social and intellectual desirability (see e.g. Rosenberg, Nelson and Vivekananthan, 1968; Rosenberg and Sedlak, 1972), or morality and intelligence<sup>1</sup>. So, when observing behaviour that is indicative of both the actor's morality and intelligence, people will have to make an implicit judgment of the relative importance of these aspects. Generally, this multi-interpretability has not received much attention in research on the way people form impressions from behaviour. The vast majority of prior impression formation studies has used unidimensional behavioural descriptions, indicative of *either* another person's morality (e.g. 'gave back extra change at the supermarket') *or* another person's intelligence (e.g. 'spoke four different languages fluently'; Skowronski and Carlston, 1987; see also e.g. Covert and Reeder, 1990; Reeder and Covert, 1986; Wojciszke, Brycz and Borkenau, 1993; an exception, however, is Wojciszke, 1994). The present research complements this literature by describing target persons in terms of behaviour that can be interpreted simultaneously in terms of both morality and intelligence.

Our *second* assumption is that perceivers are more likely to differ in their interpretation and use of behavioural information to the extent that such information is interpretable in different ways, as the possibility for different interpretations leaves room for individual differences to influence these processes. The assumption that our impression of others might be as informative about ourselves as it is about the other person (cf. Bruner, 1957) is widely shared among personality and social psychologists. To our knowledge, however, it has received little empirical attention. We explicitly investigate the influence of individual differences.

Finally, our *third* assumption is that people do not form impressions in a vacuum—they do so for a reason. In most interpersonal situations, people are dependent on others for some goal they seek to attain, and they have to interact with these others to try to do so. Impressions of others can be helpful in deciding what behaviour to expect from others, and how to behave oneself (cf. Fiske, 1992). Specifically, we investigated inferences people draw from behavioural information in an interactive situation in which people are dependent on one another, and in which they have the option to choose between pursuing self-interest or collective interest—a mixed-motive interdependence situation. Many interpersonal situations share features of mixed-motive interdependence. For example, when working on a project

<sup>1</sup>We are of the opinion that the dimensions of social and intellectual desirability represent more than just morality and intelligence. Our notion is that the first dimension represents traits and behaviours that are socially good or bad (or *other-profitable*, see Peeters and Czapinski, 1990), whereas the second dimension represents competence-related (or *self-profitable*) traits and behaviours. However, in the present research we operationalized these dimensions as morality and intelligence, respectively.

with a colleague, it is often tempting to leave the most tedious parts of the job for the other person to do. However, if you both act this way, the project is unlikely to make much progress. A feature of this type of situation is that it provides no clues on whether to view the other as a 'partner' or as an 'opponent'. Therefore, it is useful to form an impression of the other person and of the behaviour one may expect from him or her, in order to decide how to behave toward this person.

The aim of our current study was threefold. First, we intended to demonstrate that, apart from perceiver influences, morality aspects of behavioural information are generally more important than intelligence aspects in terms of predictive utility (Sherman, Judd and Park, 1989); that is, attending to morality aspects of information about another person is more useful than attending to intelligence aspects (cf. Wojciszke, 1994; Wojciszke, Bazinska and Joworski, 1998). Second, we examined how individual differences in social value orientation (i.e. prosocial versus individualistic and competitive orientation, McClintock, 1972) would influence inferences drawn from morality and intelligence information. Third, we investigated how the differences between levels of expected and own cooperation varied with characteristics of the perceiver and the perceived.

### The importance of morality

Previous research has demonstrated that when people think about others, they give more attention and weight to these others' morality rather than intelligence characteristics (Wojciszke, 1994; 1997; Wojciszke *et al.*, 1998). We complement this research by investigating the importance of morality in an interaction context. This is all the more important, because explanations for the relative importance of morality unambiguously rely on interaction (and interdependence) between people. First, morality can be defined as a sense of obligation toward others and the absence of an intention to harm others (cf. Deutsch, 1982; Van Lange and Kuhlman, 1994). Therefore, expectations of cooperativeness can be drawn more easily from morality than from intelligence information, as morality aspects are indicative of a person's trustworthiness. Second, morality information is explicitly interpersonal in nature. The positive or negative consequences for others of a person's dispositional (im)morality are very clear (Wojciszke *et al.*, 1993; see also the concept of *other-profitability* of Peeters and Czapinski, 1990). So, another person's morality tells you more about probable behaviour toward you than his or her intelligence. In sum, the morality of the perceived is both salient and relevant for the perceiver (cf. Wojciszke, 1994; Wojciszke *et al.*, 1998). Accordingly, we predicted that in a mixed-motive interdependence situation people will attend more strongly to the other person's morality than to his or her intelligence, resulting in stronger effects for morality than for intelligence on global impressions, and on levels of expected cooperation and cooperation displayed (*morality-importance hypothesis*).

### Individual differences in social value orientation

A second purpose of the current research is to investigate the way in which predictive utility assigned to morality versus intelligence aspects differs with the perceiver's personality—more specifically, with his or her *social value orientation* (McClintock, 1972). People have been found to differ systematically in the weight they assign to

outcomes for themselves and others. Generally, three types of social value orientation are distinguished (cf. Deutsch, 1960). First, *prosocials* value outcomes for both self and others positively. They will be motivated to strive for the best outcomes for all persons involved, and to minimize the differences between outcomes for self and others. Second, *individualists* only assign positive value to their own outcomes, and try to obtain the best outcomes for themselves. Finally, *competitors* assign positive value to their own outcomes and negative value to others' outcomes, and seek to obtain better outcomes than others. These three orientations have been found to be stable over time (Kuhlman, Camac and Cunha, 1986; McClintock and Allison, 1989), and predictive of behaviour in a variety of social situations (i.e. in social dilemma experiments, e.g. Kuhlman and Marshello, 1975; Liebrand, 1984; Liebrand and McClintock, 1988; Van Lange, 1992, as well as in everyday life, e.g. helping behaviour, McClintock and Allison, 1989; donation, Van Lange and Schuyt, 1997; see also Van Lange, Otten, De Bruin and Joireman, 1997).

People with different social value orientations differ not only in the levels of cooperative behaviour they display (and expect from others), but also in the way in which they interpret mixed-motive interdependence situations, or social dilemmas (see e.g. Kuhlman, Brown and Teta, 1992; Liebrand, Jansen, Rijken and Suhre, 1986; Sattler and Kerr, 1991; Van Lange and Liebrand, 1991a). Prosocials view a mixed-motive situation in terms of collective rationality and morality: they consider it good, and, from a collective viewpoint, rational to cooperate. Individualists and competitors, on the other hand, view a mixed-motive situation in terms of individual rationality and intelligence: they believe that non-cooperation is the intelligent, rational thing to do. Hence, prosocials interpret the (non)cooperative behaviour of an interdependent other in terms of morality, whereas individualists and competitors interpret the same behaviour in terms of intelligence (see e.g. Liebrand *et al.*, 1986; Van Lange and Kuhlman, 1994). Accordingly, prosocials have been found to assign more weight to personality test information about another person's morality rather than intelligence—even to the extent that they do not even use intelligence information when morality information is also present (Van Lange and Kuhlman, 1994). Individualists and competitors, on the other hand, have been found to assign more weight to personality test information about another person's intelligence. It has not been investigated, however, whether these differences would persist were people provided with multi-interpretable behavioural information, instead of clear-cut information about a person's dispositional level of morality or intelligence according to a (bogus) personality test.

Overall, these differences primarily distinguish prosocials from individualists and competitors. Therefore, in the current study, we combined individualists and competitors into a group labelled *proself* (for identical procedures, see Van Lange and Liebrand, 1989). We predicted that, when confronted with behavioural information that is interpretable in terms of both morality and intelligence, prosocials would attend more to the morality dimension, leading to stronger morality effects for prosocials than for proselfs on expected and own cooperation. Also, we predicted that proselfs would attend more to the intelligence dimension, leading to stronger intelligence effects for proselfs than for prosocials on these measures (*social value orientation hypothesis*).

## Relative benefit

Our third and final purpose was to explore how differences between expected and own cooperation would vary with characteristics of the perceiver and the perceived. We expected that people would expect higher levels of cooperation from others than they would be willing to display themselves—‘just to be on the safe side’. This deviation from reciprocity has received empirical support in previous research (e.g. Van Lange and Semin-Goossens, 1998). We will refer to this difference between expected and own cooperation as *relative benefit*. Our aim was to investigate whether relative benefit would be especially large with some targets or with some perceivers.

First, regarding influences of the *perceived* on relative benefit, we expected that relative benefit would be largest for moral and unintelligent targets<sup>2</sup>. People would expect high levels of cooperation from these targets because of their morality. At the same time, we anticipated that people would be less inclined to reciprocate these high levels of cooperation with moral/unintelligent than with moral/intelligent others: people would form a more negative global impression of the former, or they would consider them as unable to retaliate<sup>3</sup>. Second, regarding influences of the *perceiver* on relative benefit, we expected that relative benefit would be larger overall for proselves than for prosocials, because the latter are generally more inclined to reciprocate levels of expected cooperation (see e.g. De Dreu and McCusker, 1997; Van Lange, Agnew, Harinck and Steemers, 1997). Moreover, we expected that influences of the perceiver and the perceived on relative benefit would interact. As proselves associate lack of intelligence with cooperative behaviour, they are likely to expect high levels of cooperation from moral/unintelligent targets not only because of their morality, but also because of their lack of intelligence. So, proselves may expect even higher levels of cooperation from moral/unintelligent others than would prosocials. At the same time, they would be less inclined to reciprocate. Therefore, we expected that the large relative benefit with moral/unintelligent others would be especially pronounced for proselves.

## Research design and overview of hypotheses

We first assessed participants' social value orientation. Next, participants were successively paired with a number of other persons in a social dilemma task, representing a conflict between one's own interest and collective interest. Participants received behavioural information (either moral/intelligent, moral/unintelligent, immoral/intelligent, or immoral/unintelligent) about these persons.

To summarize, we advanced the following hypotheses. First, we expected the morality aspects of behavioural information to have stronger effects on global impressions, and on levels of expected cooperation and cooperation displayed, than the intelligence aspects (*morality-importance hypothesis*). Second, we expected that differences in social value orientation would influence the way in which information is

<sup>2</sup>For reasons of efficiency, we will refer to targets described by moral/intelligent (moral/unintelligent, etc) behaviour as moral/intelligent (moral/unintelligent, etc) targets throughout the text. We would like to remind the reader that, although we use the term target for reasons of convenience, the targets in the current study are not stimulus persons in the classic meaning. Instead, they are perceived as interacting with the perceiver/participant.

<sup>3</sup>In the task employed in the current study, there were no opportunities for retaliation. However, we assume that in everyday social situations, people learn to associate the lack of intelligence of a person with his or her incapacity to pursue his or her own interests. Such associations may facilitate the implicit or explicit decision to take advantage of moral/unintelligent people.

used for deriving expectations and deciding on own behaviour. We predicted (i) that prosocials would attend more to the morality dimension, leading to stronger morality effects for prosocials than for proselves on expected and own cooperation, and (ii) that proselves would attend more to the intelligence dimension, leading to stronger intelligence effects for proselves than for prosocials on these measures (*social value orientation hypothesis*). Finally, we expected that relative benefit would be largest with moral/unintelligent others, especially for proselves (*relative benefit hypothesis*).

## METHOD

### Participants and design

Participants were 164 students at the Free University of Amsterdam, recruited by means of an advertisement in the university newspaper. The design included social value orientation (prosocial versus prosel) as a between-participant factor, and morality of other (moral versus immoral) and intelligence of other (intelligent versus unintelligent) as within-participant factors.

### Procedure

The experiment was run self-paced on personal computers in individual cubicles, and was part of larger session that included multiple studies. First, participants' social value orientation was assessed. Next, the social dilemma task was explained. Participants then engaged in this two-person task with a number of (fictitious) target persons successively, each described either by a moral and intelligent, an immoral and intelligent, a moral and unintelligent, or an immoral and unintelligent behavioural description. Finally, participants were debriefed and paid for participation.

### Assessment of social value orientation

Participants' social value orientation was assessed by means of a series of nine so-called decomposed games, each involving a choice between a prosocial, an individualistic, and a competitive option. Consistent with prior research, people were classified as prosocials, individualists, or competitors if they made at least six out of nine choices consistent with one of these orientations (the decomposed games procedure is discussed more extensively by Van Lange *et al.*, 1997b). We identified 77 prosocials, 42 individualists, and 25 competitors. Twenty participants could not be classified. This distribution resembles the distributions found in previous research using the same or similar measures (e.g. McClintock and Allison, 1989; Van Lange and Kuhlman, 1994). As noted earlier, we collapsed participants across individualists and competitors, resulting in 77 prosocials (37 men, 40 women) and 67 proselves (23 men, 44 women).

### The decision making task

The mixed-motive interdependence situation was presented to participants in the form of a decision making task. Participants were told that the study involved making choices between options that would affect both the number of points they would

receive and the number of points that another person would receive. They were told that for every choice they made, they would be paired with another person, about whom they would receive some information before they had to make their choices. They received no information about the number of persons they would be paired with.

The decision making task was adopted from prior research (Van Lange and Kuhlman, 1994; Van Lange and Liebrand, 1991a; b). Participants were told that upon each new pairing with a person, this person would have four yellow points, each of which was worth 50 Dutch cents to him or her, but worth 100 Dutch cents to the participant. They were told further that they themselves would have four blue points upon each new pairing with a new person, each worth 50 Dutch cents to the participant, but worth 100 Dutch cents to the other person. Instructions stated that although the points represented money, the study would not involve additional monetary payoffs. Participants were told that their task was to decide how many points—none, one, two, three, or four—they would give to the other person. They were also led to believe that the other person would decide how many points he or she would give to them. It was stressed that every point transferred results in a 50c loss for the giver and a 100c gain for the receiver. After a few calculation examples, participants were provided with a table containing the  $5 \times 5$  payoff matrix for the task, displaying the outcomes for both themselves and the other person for all possible combinations of own and other's choices. Participants could consult this table throughout the experiment. Additionally, a ten-item questionnaire to check participants' comprehension of the task was administered, the results of which showed that all participants comprehended the task structure.<sup>4</sup> Following explanation and comprehension check, it was repeated that upon each pairing with a new person the participant would again have four blue points, and the other person four yellow points.

Half of the participants first engaged in the social dilemma task with all targets successively, and thereafter rated their global impression of all targets successively. The other half rated their global impression of a target, engaged in the social dilemma task with this target, and then went on to the next target. Preliminary analyses showed no consistent pattern of effects for order, so this variable will not be further discussed.

### **Manipulation of morality and intelligence**

Participants were told that they would receive information about recent behaviour of the persons with whom they would be paired, by noting that such information may facilitate decision making. They were also told that the other persons would not receive any information about the participant. The behavioural descriptions were selected from a two-step *pretest study*. A first group of eight people were asked to generate examples of behaviours that were either (a) moral and intelligent, (b) moral and unintelligent, (c) immoral and intelligent, or (d) immoral and unintelligent. They were asked to generate three behaviours of each category. The behaviours thus generated were reformulated so that they had about equal word lengths. Next, we asked a second group of 36 pretest participants to rate these behaviours. Specifically,

<sup>4</sup>Only one participant answered fewer than eight (namely six) out of these ten questions incorrectly. This participant received an additional oral explanation of the task structure. Excluding this participant from the analyses produced identical results; in the analysis reported here, the participant is included.



they rated, first, to what the extent the behaviours were moral or immoral, and intelligent or unintelligent. After this, they rated to what extent the behaviours were informative of the person's morality and intelligence (i.e. the diagnosticity of the behaviours for morality and intelligence). All ratings were made on seven-point scales. Pretest participants of this second group were told that all behaviours had been observed among different persons. The order in which the descriptions were presented was randomized for each pretest participant. Also, the behaviours rated by half of these pretest participants were displayed by male actors; the other half rated the same behaviours displayed by female actors. Gender of actor had no effects on the pretest ratings. From this pretest, we selected two behaviours from each category that scored higher than 4 on both seven-point diagnosticity scales, and either higher than 5 or lower than 3 on the scales for morality and intelligence. For instance, the moral/unintelligent behaviours scored higher than 4 on diagnosticity for morality and diagnosticity for intelligence, higher than 5 on the morality scale, and lower than 3 on the intelligence scale. The behaviours used are listed in the appendix.

In the main study, participants were shown one of these behaviours per target person, and were led to believe that this target had displayed the behaviour last week. Participants were paired with eight targets, two in each category. The order in which the targets were presented was randomized for each participant. We also systematically varied target gender. First, half of the targets were male and the other half were female. Furthermore, counterbalanced with other variations, half of the targets that were male in one version, were female in the other version, and vice versa. Preliminary analyses showed no consistent pattern of effects including target gender version; these variables will not be further discussed.

### **Dependent measures**

Participants were asked how many points—none, one, two, three, or four—they expected the other person to give to them (expected cooperation), and how many points—none, one, two, three, or four—they gave to the target (own cooperation). Also, they rated their global impression of the target on a five-point scale (–2, very negative; +2, very positive).

## **RESULTS**

For all dependent measures—global impressions, expected cooperation, own cooperation, and relative benefit—mean scores were computed across the two targets per category. These means are displayed in Table 1. The data were analysed by means of a series of analyses of variance, with social value orientation (prosocial versus prosself) and participant gender (male versus female) as between-participant factors, and morality (moral versus immoral) and intelligence (intelligent versus unintelligent) of the targets as within-participant factors. The results of these analyses will be discussed below.<sup>5</sup>

<sup>5</sup>Apart from the effects discussed in the text, we also found effects including participant gender, suggesting that the morality dimension was more important for women than for men, which is consistent with previous research by Wojciszke (1994; Wojciszke *et al.*, 1998). First, we found an interaction between morality and gender on global impressions,  $F(1,140) = 9.47$ ,  $p < 0.005$ . Whereas both men and women

Table 1. Effects of morality and intelligence in full-factorial analyses of variance on global impressions, expected cooperation, own cooperation, and relative benefit (i.e. the difference between expected and own cooperation).

	Means			
	Moral/ intelligent	Moral/ unintelligent	Immoral/ intelligent	Immoral/ unintelligent
Global impressions	0.99 <sub>d</sub>	0.55 <sub>c</sub>	-0.65 <sub>b</sub>	-0.93 <sub>a</sub>
Expected cooperation	2.07 <sub>b</sub>	2.61 <sub>c</sub>	0.94 <sub>a</sub>	0.89 <sub>a</sub>
Own cooperation	1.84 <sub>b</sub>	1.88 <sub>b</sub>	0.74 <sub>a</sub>	0.65 <sub>a</sub>
Relative benefit	0.23 <sub>a</sub>	0.73 <sub>b</sub>	0.20 <sub>a</sub>	0.23 <sub>a</sub>

Note: Global impression ratings were made on five-point scales anchored -2 and +2. Expected and own cooperation and the differences between them are in points, with a minimum of 0 and a maximum of 4.

Within a row, means with different subscripts are different at  $p < 0.01$ .

### Morality-importance hypothesis

We expected that the morality aspects of the information would have stronger effects on global impressions, and on levels of expected cooperation and cooperation displayed, than the intelligence aspects. This prediction received strong support in that morality main effects on these variables were stronger than intelligence main effects.

First, for *global impressions*, we found main effects for morality,  $F(1, 140) = 601.30$ ,  $p < 0.001$ , and intelligence,  $F(1, 140) = 78.40$ ,  $p < 0.001$ , as well as a morality by intelligence interaction,  $F(1, 140) = 4.58$ ,  $p < 0.05$ . Overall, moral targets elicited more favourable impressions than did immoral targets ( $M = 0.78$  versus  $M = -0.81$ , SDs 0.40 and 0.51, respectively), and intelligent targets elicited more favourable impressions than unintelligent targets ( $M = 0.17$  versus  $M = -0.20$ , SDs 0.36 and 0.33, respectively). A direct test of the morality-importance hypothesis showed that the difference between moral and immoral targets (a mean difference of 1.56) was more pronounced than the difference between intelligent and unintelligent targets (a mean difference of 0.36),  $t(143) = 15.61$ ,  $p < 0.001$ . Furthermore, looking at the means in Table 1, we observe that moral/unintelligent targets elicited more favourable impressions than did immoral/intelligent targets. The behaviour of both was positive in one respect and negative in another respect, so this means that greater weight is given to morality than to intelligence. Finally, the pattern of the morality by intelligence interaction shows that morality and intelligence strengthen each other's effects.

judged moral targets more favourably than immoral targets, this difference was more pronounced for women (0.82 versus -0.89) than for men (0.69 versus -0.65). So, women judged both moral targets more favourably (0.82 versus 0.69) and immoral targets less favourably (-0.89 versus -0.65) than did men. Second, we found an interaction between morality and gender on cooperative behaviour,  $F(1, 140) = 8.65$ ,  $p < 0.005$ . Although both men and women displayed more cooperation toward moral targets than toward immoral targets, this difference was again more pronounced for women (1.94 versus 0.61) than for men (1.75 versus 0.81). So, women both behaved more cooperatively toward moral targets (1.94 versus 1.75) and less cooperatively toward immoral targets (0.61 versus 0.81) than did men. The only other effect obtained was an unexpected four-way interaction between social value orientation, participant gender, morality, and intelligence on the difference between expected and own cooperation,  $F(1, 140) = 4.34$ ,  $p < 0.05$ . As this interaction did not show any meaningful pattern, and because of the large number of possible chance effects, this effect will not be further discussed.

For levels of *expected cooperation*, we also found main effects for morality,  $F(1, 140) = 341.55$ ,  $p < 0.001$ , and intelligence,  $F(1, 140) = 18.99$ ,  $p < 0.001$ , and a morality by intelligence interaction,  $F(1, 140) = 32.74$ ,  $p < 0.001$ . Overall, higher levels of cooperation were expected from moral than from immoral targets ( $M = 2.34$  versus  $M = 0.91$ , SDs 0.84 and 0.80, respectively), and higher levels of cooperation were expected from unintelligent targets than from intelligent targets ( $M = 1.75$  versus  $M = 1.50$ , SDs 0.71 and 0.83, respectively). Again, we found that the overall effect for morality was more pronounced than the effect for intelligence; that is, the difference between moral and immoral targets (a mean difference of 1.42) was more pronounced than the difference between intelligent and unintelligent targets (a mean difference of 0.24),  $t(143) = 13.28$ ,  $p < 0.001$ . Moreover, as can be seen in Table 1, the pattern of the interaction was such that the intelligence effect was significant only for targets who displayed moral behaviour, and not for targets who displayed immoral behaviour.

For levels of *own cooperation*, we only found a main effect for morality,  $F(1, 140) = 341.55$ ,  $p < 0.001$ : moral targets elicited more cooperation than did immoral targets ( $M = 1.86$  versus  $M = 0.70$ , SDs 1.06 and 0.87). The main effect for intelligence and the morality by intelligence interaction were not significant. Clearly, then, morality had more impact than intelligence—that is, the difference between moral and immoral targets (a mean difference of 1.16) was more pronounced than the difference between intelligent and unintelligent targets (a mean difference of 0.02),  $t(143) = 12.28$ ,  $p < 0.001$ . In sum, the morality aspects of the behavioural information had stronger effects on global impressions, levels of expected cooperation, and own cooperation than the intelligence aspects.

### Individual differences in social value orientation

We found a main effect for social value orientation on expected cooperation,  $F(1, 140) = 6.87$ ,  $p < 0.02$ : prosocials expected greater levels of cooperation than did proselfs ( $M = 1.76$  versus  $M = 1.47$ , SDs 0.69 and 0.66). Furthermore, a main effect for social value orientation on own cooperation,  $F(1, 140) = 17.70$ ,  $p < 0.001$ , showed that prosocials also displayed higher levels of cooperation than did proselfs ( $M = 1.54$  versus  $M = 0.98$ , SDs 0.87 and 0.75). These effects are consistent with previous research. More interesting, however, are the interactions between social value orientation and morality, and between social value orientation and intelligence.

We expected, first, that prosocials would attend more to the morality aspects of the information, leading to stronger morality effects for prosocials than for proselfs on expected and own cooperation. The analyses revealed an interaction between social value orientation and morality on levels of cooperation displayed toward the targets,  $F(1, 140) = 6.85$ ,  $p < 0.02$ . Both prosocials and proselfs displayed more cooperation toward moral versus immoral targets; this difference was much more pronounced for prosocials ( $M = 2.21$  versus  $M = 0.88$ , SDs 1.05 and 0.96, respectively) than for proselfs ( $M = 1.46$  versus  $M = 0.49$ , SDs 0.94 and 0.71, respectively; see Figure 1, right panel). This is consistent with our hypothesis. The interaction between social value orientation and morality on expected cooperation was not significant,  $F(1, 140) = 1.80$ , n.s.: prosocials and proselfs did not differ systematically in the way they derived expectations from information regarding morality versus immorality. No interaction was obtained between social value orientation and morality on global

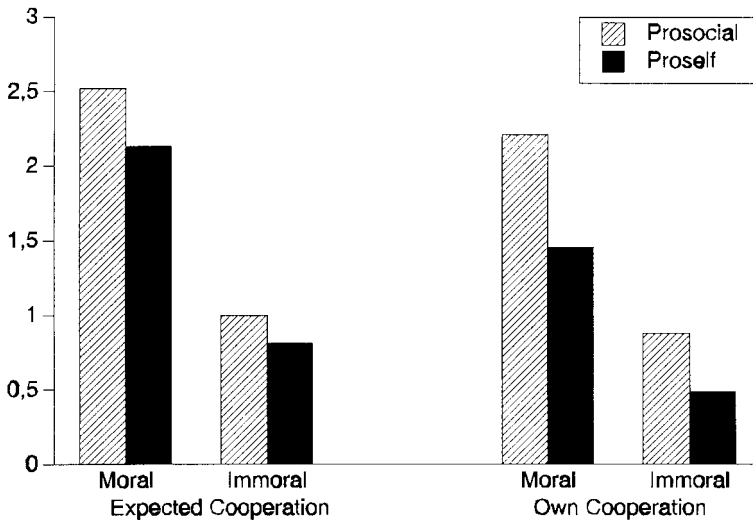


Figure 1. Levels of expected and own cooperation for proselves and prosocials depending on targets' morality

impressions; that is, individual differences in social value orientation did not influence the way in which participants formed global impressions of targets differing in morality.

Second, we expected that proselves would attend more strongly to intelligence aspects, leading to stronger intelligence effects for proselves than for prosocials on expected and own cooperation. We found a significant interaction between social value orientation and intelligence on levels of expected cooperation,  $F(1, 140) = 12.76$ ,  $p < 0.001$ . Consistent with our hypothesis, proselves expected more cooperation from unintelligent than from intelligent targets ( $M = 1.71$  versus  $M = 1.24$ , SDs 0.75 and 0.75), while prosocials did not make this difference ( $M = 1.78$  versus  $M = 1.74$ , SDs 0.67 and 0.83, respectively; see Figure 2, left panel). This means that the overall main effect for intelligence on expected cooperation is due to the expectations of proselves, and not those of prosocials. The interaction between social value orientation and intelligence on own cooperative behaviour was not significant,  $F(1, 140) < 1$ : prosocials and proselves did not differ in the levels of cooperation they displayed toward intelligent versus unintelligent others. The interaction between social value orientation and intelligence on global impressions was also not significant; that is, individual differences in social value orientation did not influence the way in which participants formed global impressions of targets differing in intelligence.

### Relative benefit

We expected that participants would, overall, expect more cooperation from others than they would be willing to display themselves, and that this relative benefit would be largest with moral/unintelligent others. In order to investigate this, we computed the difference between levels of cooperation expected and displayed as a measure of relative benefit. As can be seen in Table 1, we found strong support for our hypothesis. Overall, participants expected more cooperation from the target than they

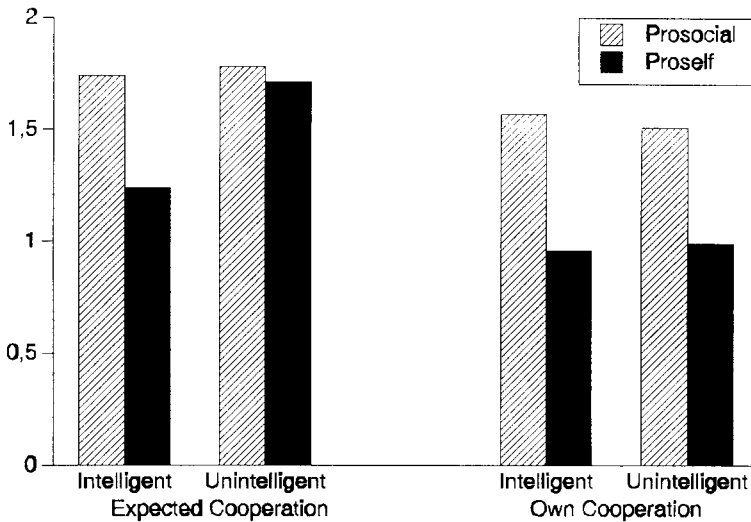


Figure 2. Levels of expected and own cooperation for proselves and prosocials depending on targets' intelligence

displayed themselves,  $F(1, 140) = 67.99$ ,  $p < 0.001$ . A main effect for morality,  $F(1, 140) = 19.19$ ,  $p < 0.001$ , indicated that, overall, relative benefit was greater with moral than with immoral targets ( $M = 0.48$  versus  $M = 0.22$ , SDs 0.75 and 0.53, respectively). A main effect for intelligence,  $F(1, 140) = 27.63$ ,  $p < 0.001$ , indicated that, overall, relative benefit was greater with unintelligent than with intelligent targets ( $M = 0.48$  versus  $M = 0.21$ , SDs 0.73 and 0.46, respectively). These main effects, however, were qualified by a significant morality and intelligence interaction,  $F(1, 140) = 29.54$ ,  $p < 0.001$ . Consistent with expectations, relative benefit was greater with moral/unintelligent targets than with any other target type (see Table 1 for means) <sup>6</sup>.

Furthermore, not only characteristics of the perceived, but also those of the perceiver, influenced relative benefit. The expected main effect of social value orientation on relative benefit was obtained,  $F(1, 140) = 10.69$ ,  $p < 0.002$ : overall, relative benefit was larger for proselves than for prosocials ( $M = 0.49$  versus  $M = 0.22$ , SDs 0.55 and 0.47, respectively). Finally, we found an interaction between social value orientation and intelligence on relative benefit,  $F(1, 140) = 9.83$ ,  $p < 0.005$ . Although both prosocials and proselves overall exhibited greater relative benefit with

<sup>6</sup>The pattern of the correlations between the dependent variables is congruent with the greater relative benefit for (especially moral) unintelligent targets, in that cooperative behaviour toward these targets is related less strongly to expectations and more strongly to global impressions. More specifically, correlations between expectations and own cooperative behaviour were generally high (and all significant at  $p < 0.001$ ), but they were higher for intelligent than for unintelligent targets—0.81 for moral/intelligent targets, 0.83 for immoral/intelligent targets, 0.56 for moral/unintelligent targets, and 0.63 for immoral/unintelligent targets. Correlations between global impressions and cooperative behaviour were much lower overall, but these were lowest for intelligent targets—namely 0.17 for moral/intelligent and immoral/intelligent targets (both  $p < 0.05$ ), 0.30 for moral/unintelligent targets ( $p < 0.001$ ), and 0.22 for immoral/unintelligent targets ( $p < 0.01$ ).

Correlations between global impressions and expected cooperation varied from 0.14 to 0.19 (0.18 for moral/intelligent, 0.14 for immoral/intelligent, 0.19 for immoral/unintelligent, and 0.16 for moral/unintelligent targets;  $p < 0.05$  for only two of these  $r$  values).

unintelligent than with intelligent targets, this tendency was more pronounced for proselves ( $M = 0.72$  versus  $M = 0.27$ , SDs 0.74 and 0.52, respectively) than for prosocials ( $M = 0.27$  versus  $M = 0.16$ , SDs 0.66 and 0.41, respectively).

## DISCUSSION

The present research investigated influences of the perceiver and the perceived on the way in which perceivers use behavioural information in forming global evaluative impressions of the perceived, in deriving expectations regarding levels of cooperation expected from the perceived, and in deciding on own cooperative or noncooperative behaviour toward the perceived. We found support for three hypotheses, regarding (i) the overall importance of morality, (ii) the influence of individual differences in social value orientation on the use of behavioural information, and (iii) the increased relative benefit with interdependent others who are both moral and unintelligent, especially by people with a prosocial orientation.

First, consistent with the *morality-importance hypothesis*, people assign more weight to the morality aspects of behavioural information than to the intelligence aspects. Perceivers consider morality to be of greater predictive utility than intelligence: expectations regarding the other's cooperative or noncooperative behaviour are based more strongly on a person's morality than on his or her intelligence. Also, people base their own cooperative or noncooperative behaviour more strongly on the other person's morality than on intelligence. Finally, people's global evaluative impressions of the other person are determined more strongly by morality than by intelligence aspects of the information. As noted before, this overall importance of morality is most probably due to its clear interpersonal nature. Unlike intelligence, morality information is, in a relatively straightforward manner, indicative of a person's good or bad intentions regarding behaviour toward other people. Therefore, attending to another person's morality helps you predict his or her likely behaviour toward yourself. Another reason for the importance of morality may be that the meaning of morality information is less ambiguous than the meaning of intelligence. Whereas a person's (im)morality directly leads to the conclusion that the person will act (non)cooperatively, a person's intelligence can be interpreted as indicative of either cooperative or noncooperative future behaviour.

Second, as we have seen, this differential interpretation varies with the perceiver's social value orientation. Consistent with the *social value orientation hypothesis*, proselves expect higher levels of cooperation from unintelligent than from intelligent others, whereas prosocials do not make this difference. Thus, a person's own interpersonal goal determines what kind of behaviour will be considered intelligent, or rational (i.e. the *goal prescribes rationality principle*; cf. Van Lange and Liebrand, 1991a). There is no direct relationship between perceived intelligence and self-interest; that is, such a relationship only exists for proselves, but not for prosocials. This is clearly at variance with traditional theorizing in game theory and economic theory (cf. Luce and Raiffa, 1957; Roth, 1988), in which the pursuit of immediate self-interest was viewed as the rational option—for everybody.

Although proselves *expect* higher levels of cooperation from unintelligent than from intelligent people, they do not differ in the levels of cooperation they *display* toward intelligent versus unintelligent people. The finding that proselves are not likely to

reciprocate high levels of expected cooperation is also consistent with prior research. Indeed, proselves are generally less likely than prosocials to base their own behaviour on the levels of cooperation they expect from others (see e.g. De Dreu and McCusker, 1997; Van Lange *et al.*, 1997a).

Also consistent with the *social value orientation hypothesis* is the finding that prosocials assign more weight to morality aspects of the information. Whereas both prosocials and proselves display more cooperation toward moral than toward immoral targets, this difference is much more pronounced for prosocials. Interestingly, prosocials and proselves did not differ in levels of cooperation expected from moral versus immoral others. So, even though people with prosocial and prosel self value orientations expect similar levels of cooperation from others based on morality information, they still differ in the extent to which they are willing to reciprocate this expected cooperation. Prosocials base their own level of cooperative behaviour more on the other's morality than proselves. In sum, these results provide evidence in favour of our assumption that multi-interpretable information leaves room for perceivers to (implicitly) decide what aspects of the information they will give most weight (cf. Bruner, 1957).

Our third, and more exploratory *relative benefit hypothesis* pertained to the difference between levels of cooperation expected from and displayed toward the other person. As predicted, people overall expect higher levels of cooperation than they are willing to display themselves, and this difference is especially pronounced with moral/unintelligent others. Furthermore, we found the perceiver's social value orientation to influence relative benefit in two respects. First, the difference between expected and own cooperation appeared to be much more pronounced overall for proselves than for prosocials. This is congruent with the notion described earlier, that prosocials are more likely than proselves to base their own behaviour on the expected behaviour from others, and to reciprocate these levels of expected cooperation. Second, the finding that relative benefit is largest for moral/unintelligent others was due to the high level of cooperation expected from these persons, and not to low levels of cooperation displayed toward them. As we saw earlier, only proselves, and not prosocials, expect more cooperation from unintelligent than from intelligent others. So, proselves are primarily responsible for the large relative benefit with moral/unintelligent others.

## A MODEL DESCRIBING INFLUENCES OF PERCEIVER AND PERCEIVED IN COOPERATIVE INTERACTIONS

In determining to what extent a perceiver will display cooperative or noncooperative behaviour toward a person perceived, attributes of both the perceived and the perceiver play a role. Based on the above results, we propose the following model describing how the perceiver, when confronted with behavioural information indicative of another person's morality and intelligence, decides on own cooperative behaviour. This model is congruent with other studies describing how morality and intelligence of the perceived and the social value orientation of the perceiver lead to cooperative or noncooperative behaviour (e.g. Van Lange and Liebrand, 1989; 1991a; b). Of course, this model is preliminary in several respects, and needs further research to validate or invalidate its claims.

A perceiver probably first attends to informational aspects regarding the morality of the perceived, and uses these in deriving expectations about this person's likely behaviour. If the other person is perceived as rather moral, high levels of cooperation are expected, and the situation becomes one in which the perceiver can look for ways to maximize his or her gains. On the other hand, if the person is perceived as rather immoral, low levels of cooperation are expected, and the situation becomes one in which the perceiver has to look for ways to minimize his or her losses.

In this latter case, the impact of information that the other is immoral will be so strong that neither the intelligence of the perceived, nor the social value orientation of the perceiver will play a role any further (for evidence concerning the large impact of negative morality information, see e.g. Reeder and Coovert, 1986). The perceiver expects and displays low levels of cooperation. Exactly how low these levels are will depend on the perceiver's social value orientation. If, on the other hand, the other person is perceived as moral, other attributes of the perceiver and the perceived can play a role—partly, maybe, because positive morality information is consistent with social norms, and therefore not very informative (Jones and Davis, 1965). However, this will only be the case for perceivers with a prosocial value orientation. Prosocials will not attend to intelligence aspects when morality aspects are also present (Van Lange and Kuhlman, 1994); and when this morality information is positive, they will expect and display high levels of cooperation. Proselfs, on the other hand, do use intelligence information in deriving expectations. If the other is perceived as unintelligent, proselfs will expect higher levels of cooperation than when the other person is intelligent. In both cases, however, the proself perceiver will display similar levels of cooperation toward the perceived, so that the result is larger relative benefit with moral/unintelligent than moral/intelligent others.

In sum, if the person described in the introduction were hired in our department, we would all first attend to her moral nature, which would determine our impressions of her. Prosocials among us would attend to her morality only. They would expect relatively high levels of cooperation from her, and be willing to reciprocate these to some extent (but not completely). Proselfs among us would also attend strongly to her being incompetent. Hence, they would expect her to be extremely cooperative, but they would not be inclined to reciprocate.

## STRENGTHS AND LIMITATIONS

We would like to close by pointing out some of the strengths and limitations of this research. First, one of the strengths of this research is that we used behavioural descriptions that were not designed to be informative of only one dimension, but captured aspects of the two most important dimensions in impression formation—social and intellectual desirability. This multi-faceted nature of behavioural information has largely been neglected in impression formation research. We contend that its openness to interpretation is one of the most important aspects of behavioural information, in that it allows for different interpretations by different people. This phenomenon will at least in part be responsible for the diversity and complexity of impressions made in everyday life situations.

Another strength of this study is that it investigates impression formation in an interaction context, in which perceivers and targets are mutually dependent and able to



choose between behavioural options that have consequences for all persons involved. Although we realize that we used only one specific type of situation in this study (which, in fact, is true of most laboratory experiments in personality and social psychology), we think that this method is appropriate for studying basic human motivations in such situations. Also, we think this type of study may be viewed as a starting point for investigating more diverse and more realistic settings in the near future.

We are aware of the fact that we must regard the above results as somewhat preliminary, as they are based on only two behavioural descriptions per target category. That is, the descriptions may have contained idiosyncratic characteristics that have influenced the results in unforeseen ways. Even then, however, it is important to note that most of our results are consistent with hypotheses. The readiness with which people derive such diverse global evaluative impressions, and such diverse conclusions about other's and own behaviour, from mere behavioural descriptions provides strong evidence for the powerful informational value of human behaviour in guiding impression formation and social interaction.

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### APPENDIX. THE BEHAVIOURAL DESCRIPTIONS USED IN THE STUDY

In order to invest his savings, he chose funds that invested in good causes and that would cause him little risk (*moral/intelligent*).

When two of his friends had not been on speaking terms for about a month, he helped them realize how childish their fight was (*moral/intelligent*).

He was being very kind to a person he did not like, because this person could help him in his career (*immoral/intelligent*).

He filled out his tax forms in such a way that he received back more money than he had a right to (*immoral/intelligent*).

When he heard that the birds did not have enough drinking water because of the cold, he put a saucer of water outside, which froze immediately (*moral/unintelligent*).

Again and again, he worked overtime, although his boss did not pay him any extras and it did not benefit his career prospects (*moral/unintelligent*).

Right in front of the referee, he brought down his opponent in a really dirty way (*immoral/unintelligent*).

On the declaration forms for a course he had followed, he also wrote down petrol costs, although his boss knew that he did not own a car (*immoral/unintelligent*).

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